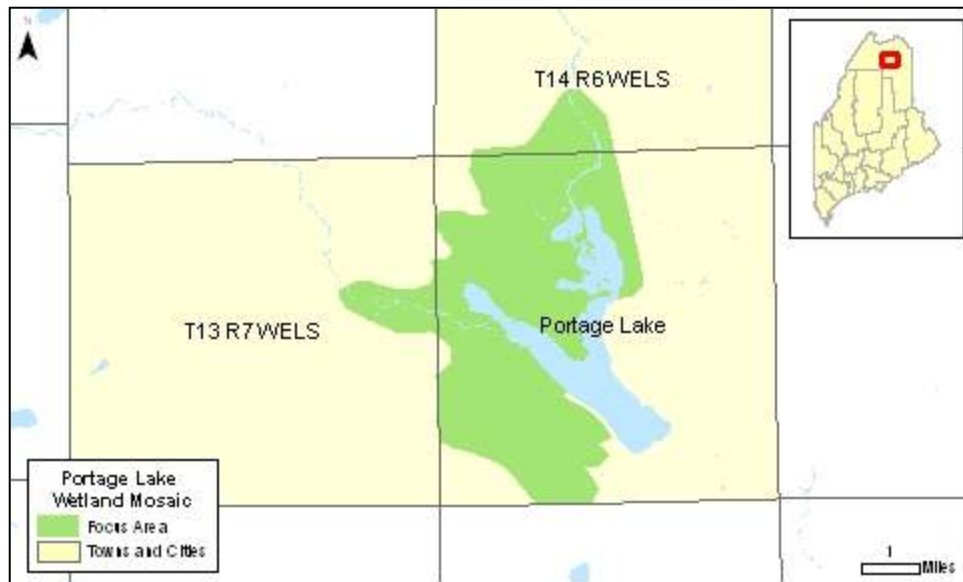


Portage Lake Wetland Mosaic Focus Area

Portage Lake, T14R6 WELS, & T13R7 WELS



Description:

The Portage Lake Wetland Mosaic Focus Area consists of an array of wetlands that border Portage Lake to the north and west. These wetlands extend westward from Portage Lake upstream along the Fish River and northward to include the Mosquito Brook drainage and the Fish River where it exits Portage Lake. The western and northern arms of this focus area include two large, Unpatterned Fen Ecosystems that are among the largest in Maine. These wetland complexes provide extensive inland waterfowl and wading bird habitat and large deer wintering areas.



Bulrush Beds along the northern margin of Portage Lake (photograph by the Maine Natural Areas Program).

Natural Communities and Rare Plants

Portage Lake North

The northeastern lobe of Portage Lake is bordered by an extensive mosaic of wetlands including rich fens, shrub bogs, forested swamps, and emergent marsh that constitute an **Unpatterned Fen Ecosystem**. Its large size, diversity of wetland types, rare bird habitat, and relatively intact condition make this system one of the most significant wetland ecosystems in the northern half of the state.



Shrubby Cinquefoil - Sedge Circumneutral Fen
(photograph by the Maine Natural Areas Program).

Specific natural community types found in the northeastern lobe include Shrubby Cinquefoil - Sedge Circumneutral Fen, Northern White Cedar Swamp, Spruce - Larch Wooded Bog, Sweet Gale - Mixed Shrub Fen, Sheep Laurel - Dwarf Shrub Bog, Alder Swamp, Bulrush Beds, Submerged Aquatic Beds, and others. The **Shrubby Cinquefoil - Sedge Circumneutral Fen** occurs on the north margin of the lake in the area south of Mosquito Brook. It is of particular note as a large, high quality example of this rare community type for the state. Four rare plant species occur in the fen including **swamp birch** (*Betula pumila*), **swamp-fly honeysuckle** (*Lonicera oblongifolia*), **Lapland buttercup** (*Ranunculus lapponicus*) and **livid sedge** (*Carex livida*). The fen is dominated by a mix of shrubs and sedges including, sweet gale (*Myrica gale*), leatherleaf (*Chamaedaphne calyculata*), bog rosemary (*Andromeda glaucophylla*), and bristly rose (*Rosa nitida*), tussock sedge (*Carex stricta*) and livid sedge.



Swamp birch (Betula pumila), a rare plant found in the calcareous fens within the Portage Lake Focus Area
(photograph by the Maine Natural Areas Program).

A **Bulrush Bed** is located in the large sheltered area of open water south and west of the Fish River outlet. The Bulrush Bed has scattered but widespread cover of emergent plants including hard-stemmed bulrush (*Schoenoplectus acutus*), bayonet rush (*Juncus militaris*), and pickerel weed (*Pontederia cordata*). Common floating leaved species are sweet scented water-lily (*Nymphaea odorata*), spatterdock (*Nuphar variegata*), watershield (*Brasenia schreberi*), and floating pondweed (*Potamogeton natans*). Submerged species include common bladderwort (*Utricularia macrorhiza*), and common water-milfoil (*Myriophyllum sibiricum*), a native milfoil species. Adjacent to the lake, there are additional rare plants such as **pygmy water-lily** (*Nymphaea leibergii*) and **water stargrass** (*Zosterella dubia*).

The northeastern lobe of Portage Lake also includes a number of well developed peatland drainage basins. These areas are mostly classified as Sheep Laurel - Dwarf Shrub Bog communities, though all of them have some areas of Spruce - Larch Wooded Bog. The Sheep Laurel - Dwarf Shrub Bogs are dominated by low growing shrubs including sheep laurel (*Kalmia angustifolia*), rhodora (*Rhodora canadense*), leatherleaf, and Labrador tea (*Rhododendron groenlandicum*), with widely scattered stunted black spruce (*Picea mariana*). Wetter sections are dominated by sedge and sphagnum moss cover. Spruce - Larch Wooded Bog forms a border around the more open shrub areas, and is more extensive in several of the bogs.

Northern White Cedar Swamps occur on the upper margins of many of the lakeside fens. The cedar swamps vary from closed canopy to partially open and have significant amounts of red maple (*Acer rubrum*) and spruce. Cinnamon and sensitive ferns are common as are numerous sedges and some taller shrubs such as mountain holly (*Nemopanthus mucronata*) and speckled alder (*Alnus rugosa*). Some of these areas have been selectively cut or thinned in the past.

Portage Lake West

The northwest cove of Portage Lake and the in-flowing Fish River are also bordered by an exemplary **Unpatterned Fen Ecosystem** that consists of an extensive mosaic of wetlands including shrub fens, forested swamps, and emergent marsh. Specific natural community types at the site include Northern White Cedar Swamp, Spruce - Larch Wooded Bog, Sweet Gale - Mixed Shrub Fen, Alder Swamp, Bulrush Beds, Submerged Aquatic Beds, and others. **Northern White Cedar Swamp** is the most common community type in the northwest cove of Portage Lake. It occupies the broad, low lying, floodplain corridor through which the Fish River flows and also borders the lakeside shrub fens along most of the upper half of the northwest cove of the lake. The exceptional example of a cedar swamp community varies from closed canopy to partially open and has significant amounts of red maple and black spruce. Tree species dominance varies with some areas on the north side of the Fish River having relatively more spruce than cedar. Cinnamon and sensitive ferns are common as are numerous sedges and some taller shrubs such as mountain holly and speckled alder. Some of these areas have been selectively cut or thinned in the distant past. A 12 inch cedar was found to be 170 years old and an 11 inch spruce was aged at 65 years old. In the Fish River, near the upstream end of the cedar swamp, another population of the rare **pygmy water-lily** occurs.

Near the outlet of the Fish River the cedar grades into red maple and alder swamp, with alder being more prevalent closer to the open lake. The upper half of the west cove is bordered by a Sweet Gale - Shrub Fen. The fen is dominated by sweet gale with scattered meadowsweet (*Spirea latifolia*), black chokeberry (*Aronia melanocarpa*), speckled alder, leatherleaf, and sedges (*Carex* spp.)

The upper half of the cove is shallow with depths generally less than one half meter and supports an extensive **Bulrush Bed**. The bulrush bed has cover of emergent plants that is very similar to the bulrush bed found on the northeastern lobe of Portage Lake. The **rare water stargrass** (*Zosterella dubia*) occurs here as well, growing in water about one meter deep in the area off of

the mouth of the Fish River. This observation coupled with its incidence in open water of similar depths in the north cove of the lake suggests that it likely occurs elsewhere in the lake where appropriate habitat is found.

Wildlife

The northern portion of the focus area provides nesting habitat for rare birds such as the **bald eagle** (*Haliaeetus leucocephalus*) and the **black tern** (*Chlidonias niger*). Bald eagles nest along sea coasts, inland lakes and major rivers. Breeding habitat includes large trees, primarily old white pines, in close proximity (less than one mile) to water where food is abundant and human disturbance is minimal. Bald eagles, once abundant in Maine, were nearly extirpated

throughout their range because of widespread use of environmental contaminants. Due to a wide variety of efforts, including designation of Essential Habitat to protect bald eagle nest sites through provisions of the Maine Endangered Species Act, bald eagles have now made a dramatic recovery. Because of Essential Habitat designation, all projects or activities funded and carried out by municipalities and state agencies within ¼ mile of eagle nests are reviewed by MDIFW. Problems for eagles still persist, however. Habitat loss, human disturbance at nest sites, environmental contamination, diminished water quality, and human-caused deaths and injuries are still primary conservation problems. Management will continue to ensure that declines of the past are not repeated, and that habitat and a clean environment persist to promote population growth and expansion. Eagles have been documented nesting around Portage Lake; the next closest documented nests are 13 miles away.



A black tern (Chlidonias niger) landing in a nest. Black terns have been documented nesting in the Portage Lake Focus Area (photograph by the Maine Natural Areas Program).

Unlike the tern species commonly spotted along the coast, in Maine, **black terns** nest in large (over 40 acres), shallow emergent freshwater marshes associated with lakes, impoundments, and slow-moving streams. About 11 nesting areas have been identified across the state, including around Portage Lake. Black terns have slowly declined throughout much of their range, and populations are about a third of that measured in the 1960s. Until recently, little was known of factors limiting black tern populations. Research at the University of Maine suggests that fluctuating water levels and nest and chick predation limit population growth. In 1991, the black tern was listed as a candidate for the federal endangered species list and in 1997 was listed as endangered in Maine. Maintaining stable water levels in impoundments, using floating nest platforms, and employing measures to deter predators may be future recovery options.

The extensive wetlands throughout this focus area provide significant **inland waterfowl and wading bird habitat**. Over 1600 acres of wetlands and shoreline around the northern and western lobes of Portage Lake have been mapped as habitat by the Department of Inland

Fisheries and Wildlife. The softwood forests around the edges of the wetlands also provide important shelter for deer and have been identified as significant **deer wintering areas** within the focus area.

Rare Features Table for the Portage Lake Wetland Mosaic Focus Area:

Common Name	Scientific Name	Status	S-Rank	G-Rank
Natural Communities				
Bulrush Marsh	Bulrush Bed	N/A	S4	GNR
Northern White Cedar Swamp	Northern White Cedar Swamp	N/A	S4	GNR
Circumneutral Fen	Shrubby Cinquefoil - Sedge Circumneutral Fen	N/A	S2	G2G3
Unpatterned Fen Ecosystem	Unpatterned Fen Ecosystem	N/A	S4	GNR
Rare Plants				
<i>Swamp birch</i>	<i>Betula pumila</i>	SC	S2S3	G5
<i>Livid sedge</i>	<i>Carex livida</i> var. <i>radicaulis</i>	SC	S2	G5T5
<i>Swamp-fly honeysuckle</i>	<i>Lonicera oblongifolia</i>	SC	S3	G4
<i>Pygmy water-lily</i>	<i>Nymphaea leibergii</i>	T	S1	G5
<i>Water stargrass</i>	<i>Zosterella dubia</i>	T	S2S3	G5
<i>Lapland buttercup</i>	<i>Ranunculus lapponicus</i>	T	S2	G5
Rare Animals				
Bald eagle	<i>Haliaeetus leucocephalus</i>	T	S4B, S4N	G4
Black tern	<i>Chlidonias niger</i>	E	S2B	G4

Other Features Mapped by MDIFW:

Deer wintering area
Inland waterfowl and wading bird habitat
Bald eagle essential habitat

Protection Status:

None of the land in this focus area is under conservation protection at this time.

Conservation Considerations:

- The integrity of wetlands and the processes and life forms they support including rare plants and animals are dependent on the maintenance of the current hydrology and water quality of

the site. Intensive timber harvesting, vegetation clearing, soil disturbance, new roads, and development on buffering uplands can result in greater runoff, sedimentation, and other non-point sources of pollution that can degrade the high quality natural systems that occur here.

- Preserving the natural communities and other sensitive features within the focus area will be best achieved by working to conserve the integrity of the larger natural systems in which these features occur. Conserving the larger systems will help ensure that both common and rare natural features will persist on the landscape in this part of the state.
- Towns should strive to protect inland waterfowl and wading bird habitat (IWWH) areas identified by MDIFW in low density, rural settings by identifying IWWH areas in comprehensive plans and zoning accordingly.
- Eagles are extremely sensitive to disturbance during their nesting season. Any activities near their nests or within their nesting territory during this period may cause nest failure or may even cause adults to abandon the nest. In general it is recommended that a 330-foot radius be left undisturbed around an eagle nest during any kind of land-clearing or timber harvest activity. Habitat protection within a ¼ mile radius of a nesting site is another significant measure that can help support nesting eagles. Consult with a MDIFW biologist prior to planning any activity that may disturb the forest around an eagle nest.

Visit our web site for more information on rare, threatened and endangered species!
<http://www.mainenaturalareas.org>

STATE RARITY RANKS

- S1** Critically imperiled in Maine because of extreme rarity (five or fewer occurrences or very few remaining individuals or acres) or because some aspect of its biology makes it especially vulnerable to extirpation from the State of Maine.
- S2** Imperiled in Maine because of rarity (6-20 occurrences or few remaining individuals or acres) or because of other factors making it vulnerable to further decline.
- S3** Rare in Maine (on the order of 20-100 occurrences).
- S4** Apparently secure in Maine.
- S5** Demonstrably secure in Maine.

Note: **State Ranks** are determined by the Maine Natural Areas Program.

GLOBAL RARITY RANKS

- G1** Critically imperiled globally because of extreme rarity (five or fewer occurrences or very few remaining individuals or acres) or because some aspect of its biology makes it especially vulnerable to extirpation from the State of Maine.
- G2** Globally imperiled because of rarity (6-20 occurrences or few remaining individuals or acres) or because of other factors making it vulnerable to further decline.
- G3** Globally rare (on the order of 20-100 occurrences).
- G4** Apparently secure globally.
- G5** Demonstrably secure globally.

Note: **Global Ranks** are determined by The Nature Conservancy.

STATE LEGAL STATUS FOR PLANTS

Note: State legal status is according to 5 M.R.S.A. § 13076-13079, which mandates the Department of Conservation to produce and biennially update the official list of Maine's endangered and threatened plants. The list is derived by a technical advisory committee of botanists who use data in the Natural Areas Program's database to recommend status changes to the Department of Conservation.

- E** ENDANGERED; Rare and in danger of being lost from the state in the foreseeable future, or federally listed as Endangered.
- T** THREATENED; Rare and, with further decline, could become endangered; or federally listed as Threatened.
- SC** SPECIAL CONCERN; Rare in Maine, based on available information, but not sufficiently rare to be considered Threatened or Endangered.